Project Narrative

I. Cover Page

Project Title: Allegheny County Targeted Air Shed Grant PM2.5-Reducing Multi-Mobile Source Replacements
Project Location: Allegheny County PM2.5 (2012 Annual Standard) Non-Attainment Area

Applicant Information:

Organization: Allegheny County Health Department
ACHD is responsible for the development and implementation of the state implementation plan (SIP) to attain and maintain the national ambient air quality standard for PM2.5 within the Allegheny County PM2.5 (2012 Annual Standard) Non-Attainment Area defined in Section I.B. of the RFA. The ACHD is currently receiving a continuing air program grant under Section 105 of the Clean Air Act to carry out those responsibilities. (Grant#A-003041-20-2).

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Budget Summary:

Project Number	Name	EPA Funding Requested	Voluntary Cost Share, if applicable	Total Project Cost
1	Allegheny County - Parks Department: 2 clean diesel snow groomers	$800,000		$800,000
2	City of Pittsburgh – Five (5) electric recycling haulers and charging station	$2,800,000		$2,800,000
3	Monark Student Transportation Co., – 10 propane and three (3) electric replacement school buses	$1,044,000		$1,044,000
	Personnel	$16,950		$16,950
	TOTAL	**$4,660,950**		**$4,660,950**

There will also be $1,170,000 in 'Leveraging." Associated with Project 3.

Project Period: January 1, 2022, to December 31, 2026.

Brief Project Description:

- Project (1) will replace two Allegheny County Parks Department diesel powered snow groomers with new snow groomers powered by clean diesel.
- Project (2) will replace five diesel powered City of Pittsburgh municipal recycle refuse trucks with 5 battery-electric recycle refuse trucks and install new charging infrastructure.
- Project (3) will fund the incremental costs of replacing 10 diesel powered school buses with propane, and three diesel powered school buses with electric, along with providing three electric charging stations.

Work-Plan:
This narrative proposal addresses the category of "replacing vehicles, engines or equipment" found in Section I.C.1 of the RFA.

Section 1. Project Summary and Approach

a. Detailed Project Summary

The PM2.5 concentrations in Allegheny County are among the highest in the nation and compromise the health and well-being of Allegheny County's residents. These projects represent actions being taken to respond to residents, elected officials and environmental health advocates seeking more actions to reduce PM2.5 in Allegheny County. The three projects, or, since they are stand-alone projects, whichever project or projects that might be awarded a TAG, will be key investments facilitating substitution of equipment and/or vehicles which will reduce emissions of fine particulate matter (PM2.5) from mobile sources and result in improvement in air quality in Allegheny County, helping Allegheny County to continue to maintain attainment of the National Ambient Air Quality Standard for PM2.5.

Exposure to PM2.5 is associated with short-term health effects such as eye, nose, throat and lung irritation, coughing, sneezing and runny nose, shortness of breath and asthma attacks. Allegheny County residents who inhale PM2.5 increase their chances of needing to be admitted to hospitals for treatment of respiratory and cardiovascular ailments. According to epidemiological studies, long-term exposure to fine particulate matter may be associated with increased rates of chronic bronchitis, reduced lung function and increased mortality from lung cancer and heart disease. Those with breathing and heart problems as well as children and older adults may be particularly sensitive to PM2.5.

These PM2.5-reducing mobile source projects will continue to achieve ongoing emission reductions over the multi-year lifetimes of the replacement equipment/vehicles.

Project (1) - Allegheny County Parks Department clean diesel-powered equipment

This project will replace two Allegheny County Parks Department dirty diesel-powered snow groomers (MY2000) used on the County Park ski slopes with clean diesel groomers.

The lower emissions replacement equipment will reduce emissions of fine particulate, PM2.5, at the parks and ski slopes by 0.023 tons per year, and 0.090 lifetime tons. NOx reductions are 0.357 tpy and 1.43 lifetime tons.

Background information:

Allegheny County, like many municipal governments, has an extensive fleet of mobile source equipment/vehicle of all sizes and fuel types. Of those, over 160 are diesel-fueled on-road vehicles and non-road equipment. The County has been exploring the use of alternative fuel vehicles, both electric, compressed natural gas (CNG), and propane, as well as new diesel and taken steps to transition our fleet to more efficient options that also reduce air pollution.

In the County Parks, due to an unreliable electric grid in the county parks, with constant power outages, and limited larger vehicles available, electric, is not a reasonable choice. Although CNG vehicles are available to replace some of the park's more common vehicles, the infrastructure is limited near most of the county parks, and the cost for county owned infrastructure would outweigh the benefits. As the County continues its replacement of older diesel vehicles and equipment, new diesel is the best fuel source considering the

technological improvements that provide high reductions in emissions compared to old diesel vehicles. This project will replace two diesel-fueled Snow Groomers used at the county's Boyce Park Ski Slopes. These are older (Model Year 2000) diesel powered pieces of equipment. Replacement of any of these vehicles with new, 'clean-diesel' powered equipment will provide reduced emissions.

Expected Benefits to Public Health and/or Environment and the Community

The County Parks have over 20 million visitors each year, 82% of which are residents of the County. Boyce Park sees about 1.7 million visitors each year, 1.4 million of which are Allegheny County residents. Boyce Park is over 1,000 acres located in Monroeville and Plum and boasts many amenities that attract visitors including the Wave Pool, the Ski Slopes, ballfields, trails, a skate parks, archery range, shelters, and a nature center. The Ski Slopes are the only downhill skiing and snowtubing hills available in all of Allegheny County; the slopes are open mid-December to mid-March to the public, but work begins much earlier in the season to prepare the hills, including the use of four diesel Snow Groomers. These groomers are run at least 400 hours over the course of the season, getting about 1 hour per 7 gallons of diesel consumed. Newer diesel snow groomers use as little as 2 gallons of fuel for every hour of runtime.

Although these vehicles will only be used for part of the year, it is the coldest part of the year, which sees increases in air pollution due to colder air trapping pollution closer to the ground and not allowing it to disperse as well as it would in warmer temperatures. Some research has also found that exhaust from snow groomers and snow mobiles can be trapped in the snowpack and is then released during snow melt, impacting local water quality. Considering the contained area where these vehicles are used, the high level of public use of that area and the colder season during use, the emissions reductions gained by replacing these vehicles can have a high impact on the air quality and health of our visitors.

Cost, Leverage and Schedule

The project is expected to cost $800,000. No Leverage. The County can complete the project in approximately 12-16 months from project approval.

Project (2) - City of Pittsburgh - Requesting 5 electric recycling trucks and the charging infrastructure

Project Participant Partner – Government of the City of Pittsburgh

The City of Pittsburgh project will procure 5 electric recycling trucks ($500,000 each) and charging infrastructure and installation ($300,000). The total project cost would be $2,800,000.

The City of Pittsburgh's roughly 75 diesel powered vehicles are the dirtiest of the fleet at a fuel economy of 3 miles per gallon. These recycling vehicles travel roughly 10,000 miles annually throughout the City's neighborhoods and run 5-6 days per week. They average 2.5 mpg and idle for an average of 2000 hours annually.

Specific reductions for this project are: PM2.5 = 0.005 tons/yr. and 0.015 tons lifetime; NOx = 0.353 tpy and 0.867 lifetime.

Expected Benefits to Public Health and/or Environment and the Community
The health of residents living in all neighborhoods of the City of Pittsburgh will be benefitted by the project. Many of these neighborhoods are Environmental Justice communities.

Project Cost, Leverage, and Schedule
The project is expected to cost $2,800,000. No "leverage" is involved. The City can complete the project in approximately 12-16 months from project approval.

Project (3) - Monark Student Transportation Company: Replacing 13 school buses with propane and electric powered school buses, and providing 3 charging stations.
Project Participant Partner – Monark Student Transportation Company

This project will support the incremental costs of replacing old diesel school buses with propane and cleaner electric buses as well as the purchase and installation of charging station infrastructure. The project will involve:

- 10 'Blue Bird Vision' 72-passenger propane school buses. Propane refueling infrastructure is already in full operation.
- Three (3) Electric School Buses – 'Blue Bird All-American Electric Transit' 78-passenger school buses, 'Blue Bird Vision Electric Conventional' 72-passenger school bus, and/or 'Microbird Electric' 30-Passenger school bus.
- Average Miles per day per bus = 100 miles

This project will result in lifetime PM2.5 emission reductions of 0.002 tons. NOx reductions are 0.152 tpy annually and 0.655 tons lifetime.

b. Emissions Inventory

The emissions inventory is taken from the "Attainment Demonstration for the Allegheny County, PA PM2.5 Nonattainment Area, 2012 NAAQS." Pollutants inventoried there include primary (direct) PM2.5 along with precursors SO2, NOx, VOC, and NH3. (Ref: Chapter 4 of SIP90 linked here: Regulations and SIPs | Air Quality | Health Department | Allegheny County)

The emissions inventories were compiled for all major and some minor sources within Allegheny County. Sources in the emissions inventories include stationary point sources, area sources, nonroad mobile sources, and onroad mobile sources. Fire and biogenic emissions are also included in the inventory. The year 2011 was used for base case emissions inventory, projected to a future case attainment year of 2021. (Note that at the time the detailed analysis was done for SIP90, the year 2021 was the "future" case. ACHD continues to refer use this terminology because this emission inventory analysis is the most current available.)

Allegheny County Emissions Inventory (Future Case - 2021)

Source type	PM2.5	PM2.5(filt)	PM2.5(cond)	PM10	SO2	NOx	VOC	NH3
Point	2,256	1,256	999	2,722	5,921	7,928	1,534	202
Area	2,708	2,226	472	5,486	1,079	6,664	10,221	615
Nonroad mobile	**234**	**234**	**0**	**248**	**5**	**2,212**	**2,752**	**6**
Onroad mobile	**266**	**266**	**0**	**722**	**31**	**5,708**	**3,479**	**209**
Fires	24	24	0	29	2	5	64	4

Biogenics	0	0	0	0	0	166	5,876	0
Total	5,488	4,007	1,471	9,207	7,039	22,686	23,926	1,037

Within the inventory, "nonroad" sources encompass a diverse collection of off-highway engines, including (but not limited to) outdoor power equipment, recreational vehicles, farm and construction machinery, lawn and garden equipment, industrial equipment, and other sources. While "onroad" sources include passenger cars, light-duty trucks, heavy-duty trucks, buses, and motorcycles. The Motor Vehicle Emissions Simulator (MOVES) model was utilized to generate emissions based on traffic counts, vehicle speeds, vehicle population growth, and other factors.

The inventory listings by process are included in the Appendix D (Emissions Inventories) of the Attainment Demonstration, including a summary of specific local source revisions and projections.
Tables D.7 and D.9 address source category inventories related to the proposed projects. Excerpts relevant to the projects are shown below.

Table D.7 Future Case (2021) Nonroad Mobile Sources (tons/yr)
(Excerpt from attached Appendix D of Attainment Demonstration)

Source Category	PM2.5	PM10	SO2	NOx	VOC	NH3
Off-Highway Equip (Diesel)	102.212	105.373	2.453	1564.032	188.472	3.714

Project (1) will help Allegheny County maintain attainment of the 2012 annual PM2.5 NAAQS –

Replacing 2 diesel powered snow groomers with 2 modern cleaner diesel groomers reduces the inventory of Off-road, Heavy-Duty Diesel PM2.5 emissions by 0.023 tpy or 0.02 percent, and NOx emissions by 0.357 tpy or 0.02 percent.

Table D.9 Future Case (2021) Onroad Mobile Sources (tons/yr)
(Excerpt from attached Appendix D of Attain Demonstration)

Fuel	Vehicle Class	PM2.5	PM10	SO2	NOx	VOC	NH3
Diesel	Light Duty	14.172	29.929	1.564	361.145	111.260	5.086
Diesel	Heavy Duty	115.759	203.013	7.290	2428.913	162.108	12.216
CNG	Heavy Duty	0.311	0.974	0.039	20.094	3.650	0.177

Projects (2) and (3) will help Allegheny County maintain attainment of the PM2.5 NAAQS --

Project (2) Replacing five (5) diesel-powered recycling haulers with five (5) electric recycling haulers reduces the inventory of On-road, Heavy-Duty Diesel PM2.5 emissions by 0.005 tpy or 0.004 percent, and NOx emissions by 0.353 tpy or 0.013 percent.

Project (3) - Replacing 13 diesel powered school buses with 10 propane school buses and three electric school buses reduces the inventory of On-road, Heavy-Duty Diesel NOx emissions by 0.15 tpy or 0.005 percent.

Methodologies - Documentation of the regional inventory development is included in the Allegheny County Portion of the Pennsylvania SIP for PM-2.5 2012 standards, submitted to EPA by the state on September 30, 2019 ("2019 SIP"), Appendix E (Emissions Inventory Documentation). Emissions inputs used for the modeling are described in Section 5 (Modeling Demonstration) and Appendix F (Modeling Protocols) of the same SIP.

c. Consideration of Activities

The diesel replacement projects will take the related equipment to the cleanest available technology appropriate for the equipment, including the cleanest new diesel engines and battery or propane powered equipment.
The two projects featuring electric charger installations will support operations of the cleanest available transportation technology - electric buses and electric refuse trucks. The advantage that electric busses and trucks have over buses and trucks powered with carbon-based fuel sources is the elimination of all vehicle tailpipe emissions. Electric buses and trucks also potentially generate significant operating and maintenance cost savings due to the relatively high energy efficiency of electric motors and significantly fewer moving parts compared to internal combustion engines.

d. Progress Towards Attainment

These projects - either individually if only one is chosen, or as a group - if two or more are chosen, will help Allegheny County maintain attainment of the PM2.5 NAAQS.

The PM2.5 concentrations in Allegheny County are among the highest in the nation and compromise the health and well-being of the Allegheny County residents. Allegheny County's citizens, stakeholders and elected officials seek greater reductions in PM2.5 and its precursors. Replacing diesel equipment, school buses, and trucks with electric, propane, or the newest clean diesel will improve the county's air quality even further. Vehicle tailpipe PM2.5 emissions, and precursor tailpipe NOx, HC and CO emissions will be eliminated for all vehicle trips operated with electric motive power instead of "dirty" diesel.

Elimination of PM2.5 and its precursor emissions from school buses and recycle trucks and snow groomers, will contribute to Allegheny County maintaining the annual PM2.5 NAAQS.

e. Roles and Responsibilities

The Allegheny County Health Department (ACHD) is the applicant. ACHD is responsible for preparing the grant application and administering the grant.

Projects (1) – In addition to preparing the grant application, the County of Allegheny will be responsible for replacing the 2 diesel powered snow groomers with clean diesel-powered equipment.
Project (2) - The City of Pittsburgh will be a project participant partner and responsible for replacing the 5 diesel powered recycling haulers with electric powered haulers and constructing charging station.
Project (3) -Monark Student Transportation Company will be a project partner and responsible for replacing 13 diesel powered school buses with 10 propane powered and three battery powered school buses and installing charging stations.

Section 2. Environmental Justice

a. Environmental Justice Issues and Environmental Health Disparities

Allegheny County's and the City of Pittsburgh's minority population are approximately 22 percent and 33 percent, respectively. For Allegheny County and Pittsburgh, the percent of the population which is low-income (households with a median income at or below 150 percent of Department of Health and Human Services poverty levels) are approximately 20 and 32 percent, respectively.

The PM2.5 concentrations in Allegheny County are among the highest in the nation and compromise the health and well-being of the Allegheny County residents. It is the desire of all stakeholders that more be done to reduce PM2.5 and its precursors in Allegheny County.

The Allegheny County Parks Department snow groomer replacement project, the City of Pittsburgh recycling trucks replacement project, and the Monark Student Transportation Company school bus replacement project will reduce emissions of fine particulate matter (PM2.5) and its precursors and result in improved air quality in Allegheny County, including in many of the County's environmental justice communities.

b. Community Engagement

The community is very engaged in Allegheny County's efforts to improve air quality. Turnout at local hearings on planning efforts to reach attainment is considerable and citizens regularly voice their input at hearings on regulatory changes and source permits. An active environmental advocacy community exists including such organizations as Group Against Smog and Pollution, Clean Water Action, Clean Air Council, and the Breathe Project. All would likely be supportive of the projects in this proposal.

Vehicle electrification is a priority for the Pittsburgh Region. The Duquesne Light Company (DLC) is advancing a Transportation Electrification Strategy to accelerate the adoption of electric vehicle in the region.
Allegheny Places, Allegheny County's Comprehensive Plan, states that its aim is to "Protect and enhance the environment and public health by promoting energy conservation and continuing to improve the County's air quality." These projects are consistent with this objective as electric school buses and recycle trucks are more energy efficient than diesel and eliminate tailpipe emissions.

Section 3. Environmental Results – Outcomes, Outputs, and Performance Measures

a. Expected Project Outputs and Outcomes

The projects will reduce emissions of particulate matter PM2.5, especially in environmental justice areas. The result is that these projects support the EPA Strategic Plan Goals described below:

EPA's 2018-2022 Strategic Plan Goal 1, "A Cleaner, Healthier Environment"; Objective 1.1: "Improve Air Quality" – "conduct a wide range of activities that contribute to improving air quality and protecting human health and the environment."

i. **Outputs**. Outputs include two (2) Allegheny County replacement pieces of clean diesel snow grooming equipment, five (5) replacement battery-electric recycling haulers along with a charging station infrastructure, and 13 replacement propane or electric school buses and charging infrastructure. Other expected outputs include the quarterly progress reports and a final report delivered in accordance with the grant requirements.

ii. Outcomes. PM2.5 emissions will be reduced in the City of Pittsburgh and throughout Allegheny County, including where several environmental justice communities are located. These PM2.5 reducing emissions projects will beneficially affect the Allegheny County PM2.5 non-attainment area as exposure to PM2.5 is associated with short-term health effects such as eye, nose, throat and lung irritation, coughing, sneezing and runny nose, shortness of breath and asthma attacks. People breathing in PM2.5 are more likely to need to be admitted to hospitals for treatment of respiratory and cardiovascular hospital ailments. Studies also suggest that long term exposure to fine particulate matter may be associated with increased rates of chronic bronchitis, reduced lung function and increased mortality from lung cancer and heart disease. Those with breathing and heart problems, children and the elderly may be particularly sensitive to $PM_{2.5.}$

Anticipated Outputs and Outcomes	
Outputs	***Outcomes***
Project (1) Replace 2 diesel powered snow groomers with "clean-diesel" powered snow groomers	Annual emission reductions = 0.023 tons PM2.5, and 0.357 tons NOx
	Lifetime emission reductions = 0.090 tons PM2.5, and 1.43 tons NOx (4 yr. lifetime)
Project (2) Replace 5 diesel-powered recycling trucks with electric and charging infrastructure	Annual emission reductions = 0.005 tons PM2.5 and 0.353 tons of NOx.
	Lifetime emission reductions= 0.015 tons PM2.5 and 0.867 tons of NOx.
Project (3) Replace 13 diesel school buses with electric and 3 charging stations	Annual emission reductions = 0.00 tons PM2.5 and 0.152 tons NOx
	Lifetime emission reductions = 0.002 tons PM2.5 and 0.655 tons NOx

b. Expected Emission Reductions

This project will eliminate vehicle generated emissions. According to the EPA Diesel Emissions Quantifier (DEQ):

Project (1) – Replacing two old dirty diesel-powered snow groomers with Tier 4 diesel powered snow groomers will reduce emissions of fine particulate, PM2.5, at the parks and ski slopes by 0.023 tons per year, and 0.090 lifetime tons. NOx reductions are 0.357 tpy and 1.43 lifetime tons.

Project (2) – Replacing five old dirty diesel-powered recycle trucks with five battery-electric powered recycle trucks will reduce PM2.5 by 0.005 tons/yr. and 0.015 tons lifetime. NOx reductions are 0.353 tpy and 0.867 tons lifetime.

Project (3) – Replacing 13 diesel powered school buses of Model Year 2010 to2013 vintage, with 10 propane powered and three battery electric school buses will have a negligible impact

on annual PM2.5 emissions because there is a very slight (on the order of a few 'ten-thousands' of tpy) uptick in the amount of PM2.5 emitted by the propane powered school buses over the amount emitted by the older model year diesel buses. That uptick is negated by the complete reduction of tailpipe PM2.5 emissions from the three battery electric replacements. This results in a lifetime PM2.5 emission reduction for this project of 0.002 tons. NOx reductions are 0.152 tpy annually and 0.655 tons lifetime.

c. Performance Measures and Plan

For all three projects, the extent of procurement and the placing into service of the replacements, and the construction of the electric charging station, will be the performance measures. The ACHD will track the extent of procurement and the placing into service of the replacements, and the construction of the electric charging stations, through quarterly reports required of each project participant partner, through invoice tracking, and through on-site inspections of replacement equipment.

d. Timeline and Milestones

Estimated and reasonable timeline for various tasks associated with the project.

Activity	Responsible Entity	Estimated Timeline
Grant preparation & submittal	ACHD, w/project participant partners	June 24, 2021
EPA review of app and selection notification	EPA	June 25 to September 2021.
Prep ACHD/project participant partners agreement.	ACHD, w/project participant partners	January 1, 2022 to May 31, 2022.
Order and procure equipment	City & County	May 31, 2022 to December 31, 2022.
Place replacement equipment in service	City & County	January 1, 2023

Section 4. Programmatic Capability and Past Performance

a. Past Performance

EPA- Funded Projects of this type in the last three years:

Assistance Agreement #1
Title: Allegheny County TAG Application of Transportation Related Emission Reduction
Assistance agreement number: TA96382701-0
Federal funding agency and assistance listing number: CFDA 66.956

Project description: That project assists the Port Authority of Allegheny County to move from diesel to electric transit buses by funding the differential in cost between the two types of motive power for seven buses and adding one electric charging station (at a different location than the charging stations being applied for now). That project involves replacing seven 60-foot diesel transit buses with seven zero tailpipe emission battery electric 60-foot buses for operation in Pittsburgh's Downtown – Uptown – Oakland – East End Bus Rapid Transit (BRT) corridor in the City of Pittsburgh and Wilkinsburg Borough, both of which are located in Allegheny County.
The project is ongoing and is being managed appropriately.

Assistance Agreement #2
Title: Allegheny County Fireplace Conversion Pilot Project – Reducing Air Pollution
Assistance agreement number: XA-96343101-01
Federal funding agency and assistance listing number: CFDA 66.034

Project description: The Allegheny County Health Department, with $20,000 in funding provided by the U.S. EPA, and $50,000 from its own Clean Air Fund, conducted a pilot program to convert residential open-hearth fireplaces to vented gas-burning fireplace appliances. In this pilot program, a $400 incentive was offered to non-low income County residents and a $1500 incentive was offered to low-income County residents to encourage the purchase and installation of gas appliances in the fireplaces of their Allegheny County homes. The overall goal of the pilot program was to inform the EPA and the ACHD on the methods and processes required to implement a fireplace conversion project, with an associated goal of conducting some outreach on asthma.

The federally funded portion of this project was completed in August of 2019 with the expenditure of all EPA funding. However, the fireplace conversion program is yet ongoing until at least August 31, 2021 with local ACHD funding. The ACHD submitted its final report to U.S. EPA and signed the closeout document (FFR) 11/19/2019. It is ACHD's understanding that the EPA considered ACHD's management of the project to be appropriate in all regards.

Assistance Agreement #3
Title: Allegheny County Clean Air Act Section 105 Grant
Assistance agreement number: A-003041-20-2
Federal funding agency and assistance listing number: CFDA 66.001

The ACHD successfully completes and manages a Clean Air Act Section 105 grant (Grant# A-003041-20-2) for Support of Air Pollution Planning and Control Programs

It is ACHD's understanding that the EPA considered ACHD's management of the agreement to be appropriate in all regards.

b. Reporting Requirements

The Department regularly meets the reporting requirements under those agreements and documents the progress the Air Quality Program makes toward achieving the expected results, i.e., outputs and outcomes, by completing the EPA work plan documents as necessary.
For Assistance Agreement #1, there have only been two quarterly reporting periods to date. ACHD submitted a quarterly report within a month of the end of the reporting period for the first period, but was late for the second reporting period. For Assistance Agreement #2, an approximate review of emails indicates a quarterly report was submitted for each quarter with an on-time (submitted within the one month after close of reporting period) rate being about 50% but with most late reports being late by less than a week. For Assistance Agreement #3, it is believed that these are routinely submitted on time.

c. Staff Expertise

Jayme Graham, Manager of the ACHD Air Quality Program and **Sandra Etzel**, Manager of Planning for the AQP, and **Jason Maranche**, Air Pollution Control Engineer, have significant knowledge of the issues surrounding the Allegheny County PM2.5 designation

and what actions must be taken to continue to maintain attainment. ACHD has experienced grant managers and other resources necessary to successfully manage this grant. Deputy Director, **Kim Joyce**, and Finance Manager, **Keith Horner**, have had experience with state and federal grants, and will provide fiscal management for this project and will submit all required reports. Ms. Graham and Ms. Etzel have successfully handled recent Clean Air Act Section 105 grant (A-003041-20), and a Section 103 Special Studies grant (Grant# PM-973128-02-0) for fine particulate matter PM2.5 monitoring. **Thomas Lattner**, Air Pollution Control Engineer, has experience with U.S. EPA grants (Current Targeted Air Shed Grant TA96382701-0, Fireplace Conversion Grant XA-96343101-1, 2015 Targeted Air Shed Grant EM-83493601-1, National Clean Diesel Funding Assistance Agreement 2A-97379401, and Woodstove Exchange Cooperative Agreement XA-83276801).

Since 2005, the ACHD Air Quality Program Staff has had significant experience with diesel powered equipment Retrofit/Repower/Replacement projects, including those funded by EPA ($3.5 Million ARRA Stimulus grant) and those it funds from its own Clean Air Fund. See table below.

Project	Equipment Retrofitted	Funding Amount & Source	Year
Penn Hills Schools	75 School Buses retrofitted w/DOCs	$185,000 ACHD Clean Air Fund	2005
Deer Lakes Schools	10 School Buses; DOCs	$10,650 ACHD Clean Air Fund	2006
City of Clairton	11 Municipal Vehicles; DOCs	$135,000 ACHD Clean Air Fund	2008
Port Authority	9 Bus repowers/2 New Hybrid buses	$1,007,500 EPA ARRA Stimulus	2009
CSXT Trans	1 Repowered switcher locomotive	$875,0000 EPA ARRA Stimulus	2009
Construct Assoc	40 Construction Vehicles	$1,231,939 EPA ARRA Stimulus	2009
Multi Serv Inc.	8 Dump Trucks retrofitted w/DPFs	$300,500 EPA ARRA Stimulus	2009
City of Pittsburgh	33 Refuse Trucks retrofitted w/DPFs	$433,000 EPA ARRA via the DEP	2009
"Build it with Clean Diesel"	Construction equip operated by small business in Allegheny County.	$920,000 ACHD Clean Air Fund made available. $375,000 spent.	2011 -2017
Neville Island Clean Diesel	26 off-road equip retrofit DPFs.	$750,000 ACHD Clean Air Fund	2014 -16

Section 5. Budget

Leveraged Funding

Monark Student Transportation Company will be contributing $1,170,000 to Project (3)

a. Detailed Budget Narrative

The proposed budget for these projects is $4,644,000 in grant funding and $1,170,000 in "Other" leveraged funding. ACHD's $4,660,950 grant funding request (includes ACHD Personnel Costs) will be used to fund activities undertaken by ACHD and its project participant partners the City of Pittsburgh, and Monark Student Transportation Company, related to the replacement of diesel-powered recycling haulers, school busses, and other equipment (namely, two snow groomers), as well as the installation of electric charging stations. The City of Pittsburgh, and Monark Student Transportation Company will also provide "In-kind" services of project management. ACHD "In – Kind" services include oversight of individuals tasked with ensuring that grant deliverables are being appropriately verified and tracked in all aspects from verification of work to expense and report tracking. ACHD is requesting minimal staff time for administrative tasks associated with contract management of its project participant partners and financial management.

	EPA Funding	Non-Federal Cost Share	"Other" Leverage
PERSONNEL – ACHD	**Federal**	**Cost Share**	**"Other" Leverage**
Fiscal Officer – $50,100yr x 5.75%	$2,881.00		
Contract Administrator – $45,000yr x 6%	2,700.00		
Air Quality Engineer – $65,000 x 10%	6,500.00		
TOTAL PERSONNEL	**$12,081.00**		
Fiscal Officer - 43% Fringe	$1,238.00		
Contract Administrator - 43% Fringe	$1,161.00		
Air Quality Engineer - 38% Fringe	$2,470.00		
TOTAL FRINGE BENEFITS	**$4,869.00**		
EQUIPMENT	**Federal**	**Cost Share**	**"Other" Leverage**
Order and procure two (2) Clean Diesel-powered County Public Works Dept. equipment pieces (snow groomers).	$800,000		
City of Pgh - order and procure 5 electric recycling haulers and charging infrastructure	$2,800,000		
Monark Student Transportation Co., – incremental cost of replacing 13 diesel school buses with 10 propane and three (3) electric powered school busses and adding 3 charging stations	$1,044,000		**$**1,170,000
TOTAL EQUIPMENT	**$4,644,000**		**$1,170,000**
OTHER–PARTICIPANT SUPPORT COSTS	**Federal**	**Cost Share**	**"Other" Leverage**
Engineering, procurement specification, and project management	$0.00		In-kind
TOTAL OTHER	**$0.00**		**$0.00**
TOTAL FUNDING	**$4,660,950**		**$1,170,000**
TOTAL PROJECT COST (federal and non-federal)	**$4,660,950**		
Leveraged Resources	**$1,170,000**		

b. Expenditure of Awarded Funding

As indicated above in Section 3.d, "Timelines and Milestones," upon notification of being the recipient of an award under this RFA, the ACHD would immediately set about preparing letters of agreement between ACHD and any of its project participant partners that may be funded, covering all aspects of the projects. These legal contracts detail what the ACHD will fund, what the specifications the project participant partner must meet when procuring the equipment that is to meet the project objectives, what schedule

requirements must be met to ensure that the federal funds are expended in a timely manner, what scrappage requirements must be met, if any, what reporting requirements must be met, what invoicing requirements must be met, and what federal administrative and programmatic requirements must be met. These legal contracts are approved at the highest appropriate level of all parties involved.

Once contracts/letter agreements are signed, control of the awarded federal funds is implemented by the Air Program through scrutiny of invoices to ensure expenditures are valid and appropriate, and to the ACHD Fiscal Manager, who follows all appropriate federal procedures in drawing down awarded funding. The Air Program Manager submits necessary periodic reports to the EPA detailing progress made during the reporting period to help ensure that awarded grant funds are expended in a timely and efficient manner.

c. Reasonableness of Costs

This grant application seeks $4,644,000 to purchase and install three fast (450 kW) electric chargers and associated infrastructure improvements comprised of electrical equipment.

Item	**Units**	**Unit Cost**	**Total**
Project #1			
Clean diesel snow groomers	2	$400,000	$800,000
Project #2			
Battery electric recycle trucks	5	$500,000	$2,500,000
Charging infrastructure and installation for recycle trucks	1	$300,000	$300,000
Project #3			
Incremental cost of propane powered school bus	10	$10,000	$100,000
Incremental cost of electric powered school bus-78 foot long	1	$260,000	$260,000
Incremental cost of electric powered school bus-72 foot long	1	$245,000	$245,000
Incremental cost of electric powered school bus- 30 ft long	1	$190,000	$190,000
DC EVSE Charging station	3	$55,000	$165,000
Charging station installation	3	$28,000	$84,000
Administration (ACHD)			**$16,950**
Total Grant Funds			**$4,660,950**

ACHD's personnel charges are 5.75%, 6%, and 10% of annual hours for a Fiscal Officer, Contract Administrator, and Air Pollution Control Engineer and do not reflect hours worked by other personnel throughout the Air Program and Administration in delivering this project.

Leverage ("Other" leverage)

Leveraged Resources from participants in all three of the projects will exist in the form of project management, engineering, and design of the equipment procurement specifications. Monark Student Transportation Company will provide leverage in the form of paying the costs of the base diesel bus ($90,000 x 13 buses to be replaced = $1,170,000).